

MINIMUM CRITERIA DETERMINATION CHECKLIST

TIP Project No. B-5947
W.B.S. Project No. 45983.1.1

Project Location: Bridge No. 630091 over Tar River on NC 581 in Nash County

Project Description: The purpose of this project is to replace Nash County Bridge No. 630091 on NC 581 over Tar River. Bridge No. 630091 is 311 feet long. The replacement structure will be a bridge approximately 310 feet long providing a minimum 34 feet clear deck width. The bridge will include two 12-foot lanes and 5-foot offsets. The bridge length is based on preliminary design information and is set by hydraulic requirements. The roadway grade of the new structure will be raised to match the existing low chord elevation. The proposed bridge will be replaced to the west of the existing bridge. Traffic will be maintained on the existing bridge during construction of the proposed bridge.

The approach roadway will extend approximately 1,023 feet from the south end of the new bridge and 1,160 feet from the north end of the new bridge. The approaches will be widened to include a 24-foot pavement width providing two 12-foot lanes. Eight-foot shoulders will be provided on each side (11-foot shoulders where guardrail is included) with 2' paved shoulders. The roadway will be designed as a Major Collector Route with a 60 mile per hour design speed.

Purpose and Need: NCDOT Bridge Management Unit records indicate Bridge No. 630091 has a sufficiency rating of 16.53 out of a possible 100 for a new structure. Per the latest Bridge Inspection Report the bridge is considered structurally deficient because the superstructure and substructure condition ratings are 4 out of 9.

The substructure of Bridge No. 630091 have timber elements that are seventy years old. Timber components have a typical life expectancy between 40 to 50 years due to the natural deterioration rate of wood. Rehabilitation of a timber structure is generally practical only when a few elements are damaged or prematurely deteriorated. However, past a certain degree of deterioration, most timber elements become impractical to maintain and upon eligibility are programmed for replacement. Timber components of Bridge No. 630091 are experiencing an increasing degree of deterioration that can no longer be addressed by reasonable maintenance activities, therefore the bridge is approaching the end of its useful life.

Anticipated Permit or Consultation Requirements:

A Nationwide Permit will likely be required from the U.S. Army Corps of Engineers (USACE) for impacts to “Waters of the United States” resulting from this project. In addition, an NCDWR Section 401 Water Quality General Certification (GC) may be required prior to the issuance of a Section 404 Permit. The USACE holds the final discretion as to what permit will be required to authorize project construction.

Special Project Information:

Estimated Costs:

The estimated costs are as follows:

R/W: \$ 57,500
Util.: \$ 35,000
Const: \$ 6,400,000
Total: \$ 6,492,500

Estimated Traffic:

2020 (Let) 5,300 vpd
2040 (Design) 6,300 vpd
TTST 1%
Dual 4%

Accidents: Traffic Engineering has evaluated a recent five year period and found two accidents occurring in the vicinity of the project. One of the accidents involved a head on collision and one of the accidents involved a vehicle striking a fixed object.

Design Exceptions: There are no anticipated design exceptions for this project.

Pedestrian and Bicycle Accommodations: According to the Nash County Comprehensive Transportation Plan NC 581 is recommended for on-road bicycle facilities and connects with State Bike Route 2. The proposed bridge will include a 5' shoulder on both sides to accommodate future bicycle use. The bridge rail will be the standard 42" F-shape rail which is considered bicycle safe. No temporary bicycle or pedestrian accommodations will be provided.

Bridge Demolition: Bridge No. 630091 has a concrete deck with steel I-beams and reinforced concrete caps on timber piles. Based on standard demolition practices, it should be possible to remove with no resulting debris in the water.

Alternatives Discussion:

No Build – The no build alternative would result in eventually closing the road which is unacceptable given the volume of traffic served by NC 581.

Rehabilitation – The bridge was constructed in 1949 and the timber materials within the bridge are reaching the end of their useful life. Rehabilitation would require replacing the timber components which would constitute effectively replacing the bridge.

Offsite Detour – An offsite detour was not considered due to the length of the offsite detour and the volume of traffic served by NC 581. The available offsite detour is NC 97 to SR 1001 to SR 17 to SR 1921 and is 12.5 miles in length and there are 5,300 vpd traveling NC 581. In addition, Southern Nash Middle School is located just 0.5 miles south of the bridge and school/bus traffic would be heavily impacted by an offsite detour.

Preferred Alternative – The preferred alternative replaces the bridge just west of the existing bridge. The bridge length is based on preliminary design information and is set by hydraulic requirements. The roadway grade of the new structure will be raised to match the existing low chord elevation. To minimize impacts to the Tar River the proposed bridge will span the river. Traffic will be maintained on the existing bridge during construction of the proposed bridge and impacts to traffic from the adjacent Southern Nash Middle School will be minimized.

Public Involvement:

A landowner notification letter was sent to all property owners affected directly by this project on November 15, 2018. Property owners were invited to comment. No comments have been received to date.

PART A: MINIMUM CRITERIA

Item 1 to be completed by the Engineer.

- 1. Is the proposed project listed as a type and class of activity allowed under the Minimum Criteria Rule in which environmental documentation is not required?

YES

NO

If the answer to number 1 is “no”, then the project does not qualify as a minimum criteria project. A state environmental assessment is required.

If yes, under which category? **8**

If either category #8, #12(i) or #15 is used complete Part D of this checklist.

PART B: MINIMUM CRITERIA EXCEPTIONS

Items 2 – 4 to be completed by the Engineer.

- 2. Could the proposed activity cause significant changes in land use concentrations that would be expected to create adverse air quality impacts?
- 3. Will the proposed activity have secondary impacts or cumulative impacts that may result in a significant adverse impact to human health or the environment?
- 4. Is the proposed activity of such an unusual nature or does the proposed activity have such widespread implications, that an uncommon concern for its environmental effects has been expressed to the Department?

YES

NO

Item 5-8 to be completed by Division Environmental Officer.

- | | YES | NO |
|--|--------------------------|-------------------------------------|
| 5. Does the proposed activity have a significant adverse effect on wetlands; surface waters such as rivers, streams, and estuaries; parklands; prime or unique agricultural lands; or areas of recognized scenic, recreational, archaeological, or historical value? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6. Will the proposed activity endanger the existence of a species on the Department of Interior's threatened and endangered species list? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7. Could the proposed activity cause significant changes in land use concentrations that would be expected to create adverse water quality or ground water impacts? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|
 | | |
| | YES | NO |
| 8. Is the proposed activity expected to have a significant adverse effect on long-term recreational benefits or shellfish, finfish, wildlife, or their natural habitats | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

If any questions 2 through 8 are answered “yes”, the proposed project may not qualify as a Minimum Criteria project. A state environmental assessment (EA) may be required. For assistance, contact:

Manager, Environmental Analysis Unit
 1598 Mail Service Center
 Raleigh, NC 27699-1598
 (919) 707 – 6000
 Fax: (919) 212-5785

PART C: COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

Items 9- 12 to be completed by Division Environmental Officer.

- | | YES | NO |
|--|-------------------------------------|-------------------------------------|
| 9. Is a federally protected threatened or endangered species, or its habitat, likely to be impacted by the proposed action? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 10. Does the action require the placement of temporary or permanent fill in waters of the United States? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 11. Does the project require the placement of a significant amount of fill in high quality or relatively rare wetland ecosystems, such as mountain bogs or pine savannahs? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

12. Is the proposed action located in an Area of Environmental Concern, as defined in the coastal Area Management Act?

Items 13 – 15 to be completed by the Engineer.

- | | YES | NO |
|--|--------------------------|-------------------------------------|
| 13. Does the project require stream relocation or channel changes? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Cultural Resources

- | | | |
|---|--------------------------|-------------------------------------|
| 14. Will the project have an “effect” on a property or site listed on the National Register of Historic Places? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 15. Will the proposed action require acquisition of additional right of way from publicly owned parkland or recreational areas? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Questions in Part “C” are designed to assist the Engineer and the Division Environmental Officer in determining whether a permit or consultation with a state or federal resource agency may be required. If any questions in Part “C” are answered “yes”, follow the appropriate permitting procedures prior to beginning project construction.

Additional Documentation as Required from Sections B & C

Question 9: Michaux’s sumac - Habitat in the form of maintained roadside, powerline and utility rights of way and edges of artificially maintained clearings was present in the project study area. A September 26, 2018 survey of the project study area revealed no presence of Michaux’s sumac. Additionally, an October 8, 2018 review of NCNHP records by NCNHP staff indicated no known occurrences of Michaux’s sumac within 1.0 mile of the project study area. Subsequently, the biological conclusion for the Michaux’s sumac is **No Effect**.

Yellow lance mussel - Habitat in the form of fast flowing, well-oxygenated, circumneutral pH water with a stream bed composed of unconsolidated gravel and coarse sand was present in the project study area. An October 8, 2018 review of NCNHP records by NCNHP staff indicated an occurrence of the yellow lance within the project study area. In addition, yellow lance is listed within the Biddie Toe Creek-Tar River drainage (12 Digit HUC 030201010603) per the USFWS. Pending determination by NCDOT staff the biological conclusion for the yellow lance is **Unresolved**. Surveys for this species will be conducted the NCDOT Biological Surveys Group if necessary.

Tar River spiny mussel - Habitat in the form of moderate to fast flowing, well-oxygenated, circumneutral pH water with a stream bed composed of unconsolidated gravel and coarse sand was present in the project study area. An October 8, 2018 review of NCNHP records by NCNHP staff indicated no occurrences of the Tar River spiny mussel within 1.0 mile of the project study area. However, Tar River spiny mussel is listed within the Biddie Toe Creek-Tar River drainage (12 Digit HUC 030201010603) per the USFWS. Pending determination by NCDOT staff the biological conclusion for the Tar River spiny mussel is **Unresolved**. Surveys for this species will be conducted the NCDOT Biological Surveys Group if necessary.

Dwarf wedgemussel - Habitat in the form of slow to moderate current and sand, gravel, or firm silt bottoms was not present in the project study area. An October 8, 2018 review of NCNHP records by NCNHP staff indicated no occurrences of the dwarf wedgemussel within 1.0 mile of the project study area. The USFWS does not list the dwarf wedgemussel within the Biddie Toe Creek-Tar River drainage (12 Digit HUC 030201010603). Subsequently, the biological conclusion for the dwarf wedgemussel is **No Effect**.

Northern long-eared bat - The US Fish and Wildlife Service has developed a programmatic biological opinion (PBO) in conjunction with the Federal Highway Administration (FHWA), the US Army Corps of Engineers (USACE), and NCDOT for the northern long-eared bat (NLEB) (*Myotis septentrionalis*) in eastern North Carolina. The PBO covers the entire NCDOT program in Divisions 1-8, including all NCDOT projects and activities. The programmatic determination for NLEB for the NCDOT program is **May Affect, Likely to Adversely Affect**. The PBO provides incidental take coverage for NLEB and will ensure compliance with Section 7 of the Endangered Species Act for five years for all NCDOT projects with a federal nexus in Divisions 1-8, which includes Nash County, where B-5947 is located. This level of incidental take is authorized from the effective date of a final listing determination through April 30, 2020.

Question 10: The proposed project will require fill in waters along the project due to the proposed bridge replacement. The impacts are as follows: approximately 160 linear foot of impact to the Tar River and approximately 0.6 acres of permanent fill in wetlands. The stream impacts are due to the rip rap that will be placed on the stream banks and 3:1 fill slopes are being utilized to minimize wetland impacts.

PART D:(To be completed when either category #8, 12(i) or #15 of the rules are used.)

Items 16- 22 to be completed by Division Environmental Officer.

- | | |
|--|---------------------------------------|
| 16. Project length: | <u>0.472 mi.</u> |
| 17. Right of Way width: | <u>Var.</u> |
| 18. Project completion date: | <u>March 2022</u> |
| 19. Total acres of newly disturbed ground surface: | <u>3.6 ac.</u> |
| 20. Total acres of wetland impacts: | <u>0.6 ac.</u> |
| 21. Total linear feet of stream impacts: | <u>160 ft.</u> |
| 22. Project purpose: | <u>Replace Existing Bridge</u> |

If Part D of the checklist is completed, send a copy of the entire checklist document to:

David B. Harris, PE
State Roadside Environmental Engineer
Mail Service Center 1557
Raleigh, NC 27699-1557
(919) 707-2920
Fax (919) 715-2554
Email: davidharris@ncdot.gov

Prepared By:

8/22/2019

Date

DocuSigned by:

Greg S. Purvis

Greg S. Purvis, PE, Project Manager
Wetherill Engineering



Prepared For:

North Carolina Department of Transportation Structures Management Unit

Approved By:

8/22/2019

Date

DocuSigned by:

Kevin Fischer

Kevin Fischer, PE Assistant State Structures Engineer – Program Management and Field Operations, Structures Management Unit North Carolina Department of Transportation

8/28/2019

Date

DocuSigned by:

Philip S. Harris, III

Philip S. Harris, III, PE Unit Head – Environmental Analysis Unit North Carolina Department of Transportation

PROJECT COMMITMENTS:

**Nash County
Bridge No. 630091 on NC 581
Over Tar River
W.B.S. No. 45983.1.1
T.I.P. No. B-5947**

NCDOT Hydraulic Unit – FEMA Coordination

The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP), to determine status of project with regard to applicability of NCDOT’S Memorandum of Agreement, or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

NCDOT Division Four Construction, Resident Engineer’s Office -FEMA

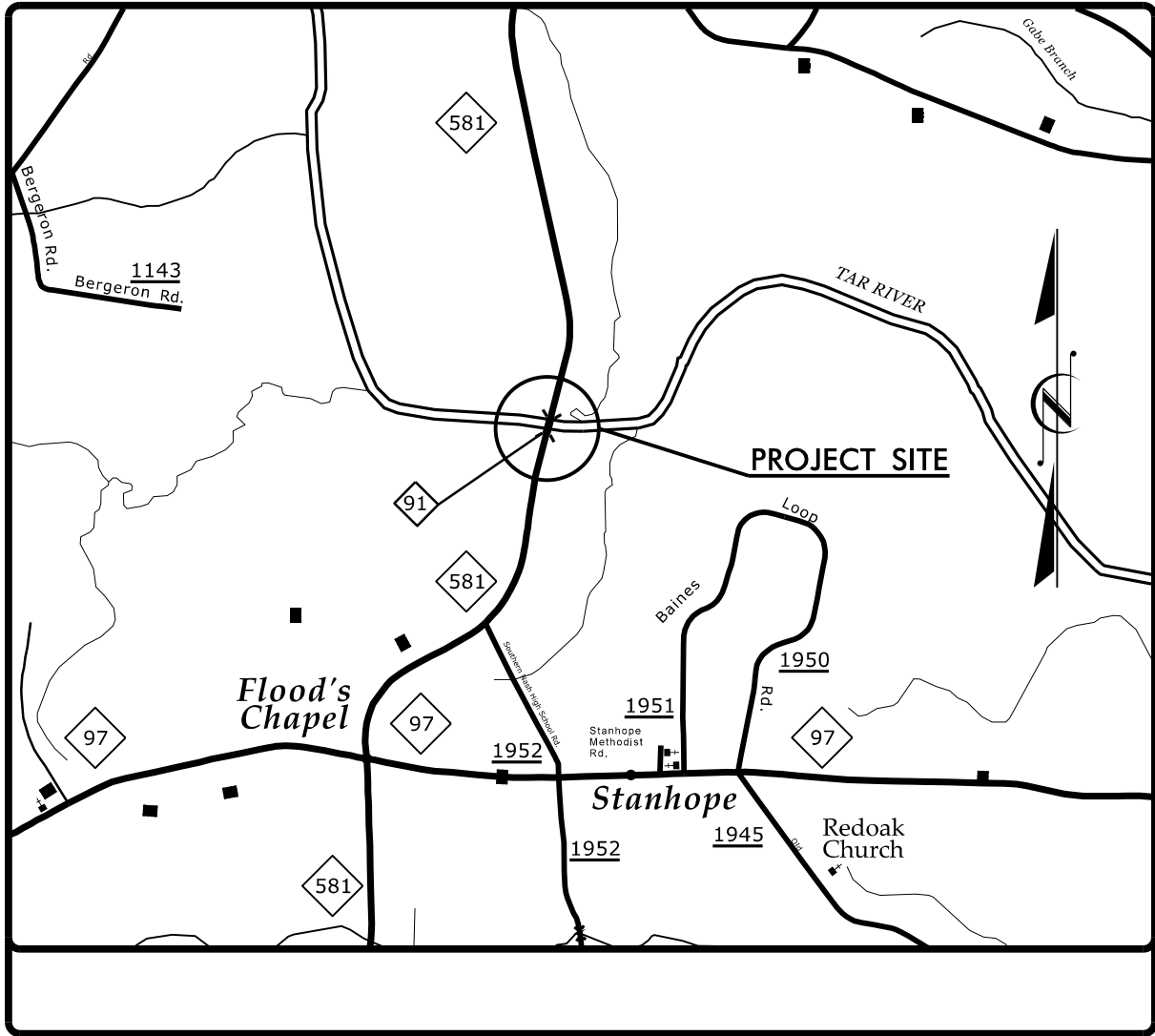
This project involves construction activities on or adjacent to FEMA-regulated stream(s). Therefore, the Division shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structure(s) and roadway embankment that are located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

NCDOT Hydraulic Unit – Buffer Rules

The Tar-Pamlico River Basin Rule applies to this project.

NCDOT Environmental Analysis Unit – Section 7

Section 7 will need to be resolved for the Yellow lance mussel and the Tar River spiny mussel prior to permitting and construction.



B-5947

REPLACE BRIDGE NO. 630091
ON NC 581
OVER TAR RIVER

NASH COUNTY

WBS 45983.1.1

NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION 4

VICINITY MAP - FIGURE 1

BEGIN NCDOT PROJECT B-5947

-LREV- POT STA. 12 + 02.61

JEFFREY J. BROWN
DB 2395 PG 654
PB 24 PG 76

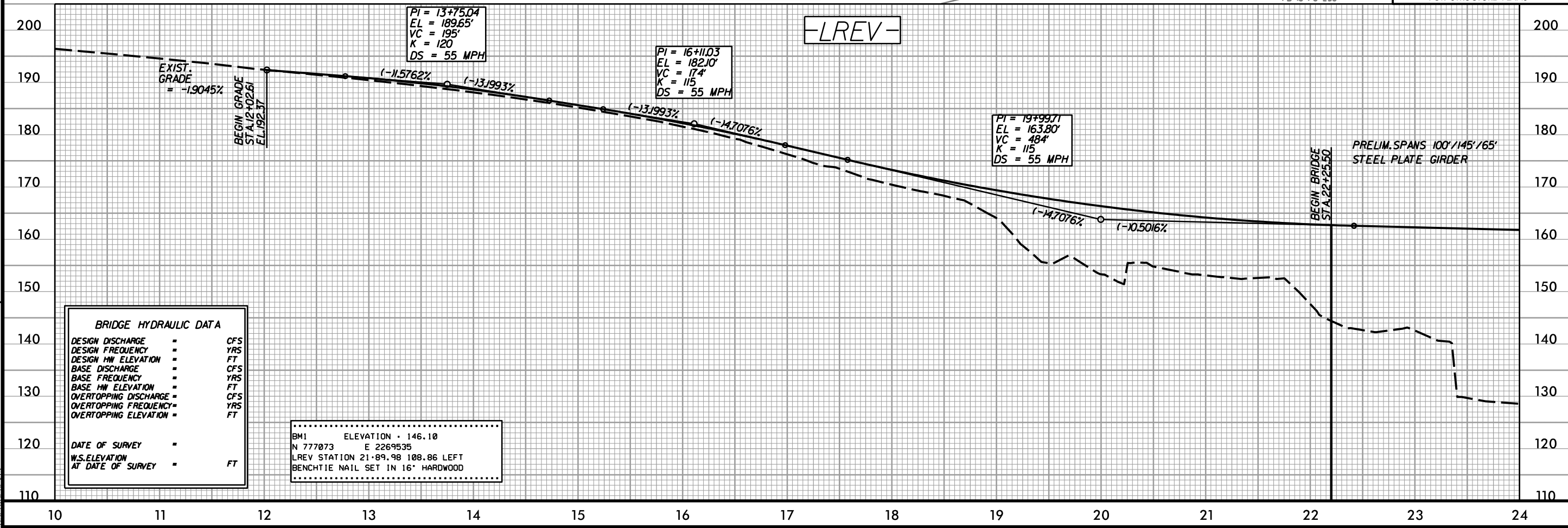
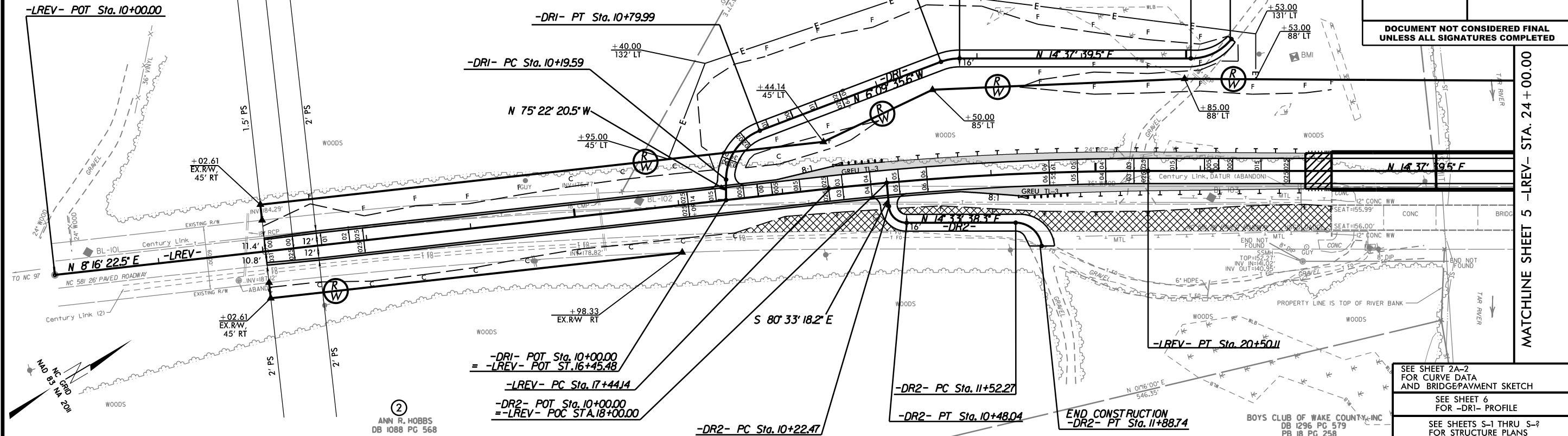
RWCMAHAN LLC
DB 2916 PG 445
PB 24 PG 76



1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

PROJECT REFERENCE NO. B-5947	SHEET NO. 4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



BRIDGE HYDRAULIC DATA	
DESIGN DISCHARGE	CFS
DESIGN FREQUENCY	YRS
DESIGN HW ELEVATION	FT
BASE DISCHARGE	CFS
BASE FREQUENCY	YRS
BASE HW ELEVATION	FT
OVERTOPPING DISCHARGE	CFS
OVERTOPPING FREQUENCY	YRS
OVERTOPPING ELEVATION	FT
DATE OF SURVEY	
W.S. ELEVATION AT DATE OF SURVEY	FT

BM1 ELEVATION = 146.10
N 777073 E 2269535
LREV STATION 21+89.98 108.86 LEFT
BENCHTIE NAIL SET IN 16" HARDWOOD

REVISIONS

8/8/2019
B-5947_rdy.psh 4.dgn

MATCHLINE SHEET 5 -LREV- STA. 24 + 00.00

SEE SHEET 2A-2 FOR CURVE DATA AND BRIDGEPAVEMENT SKETCH
SEE SHEET 6 FOR -DRI- PROFILE
SEE SHEETS S-1 THRU S-? FOR STRUCTURE PLANS

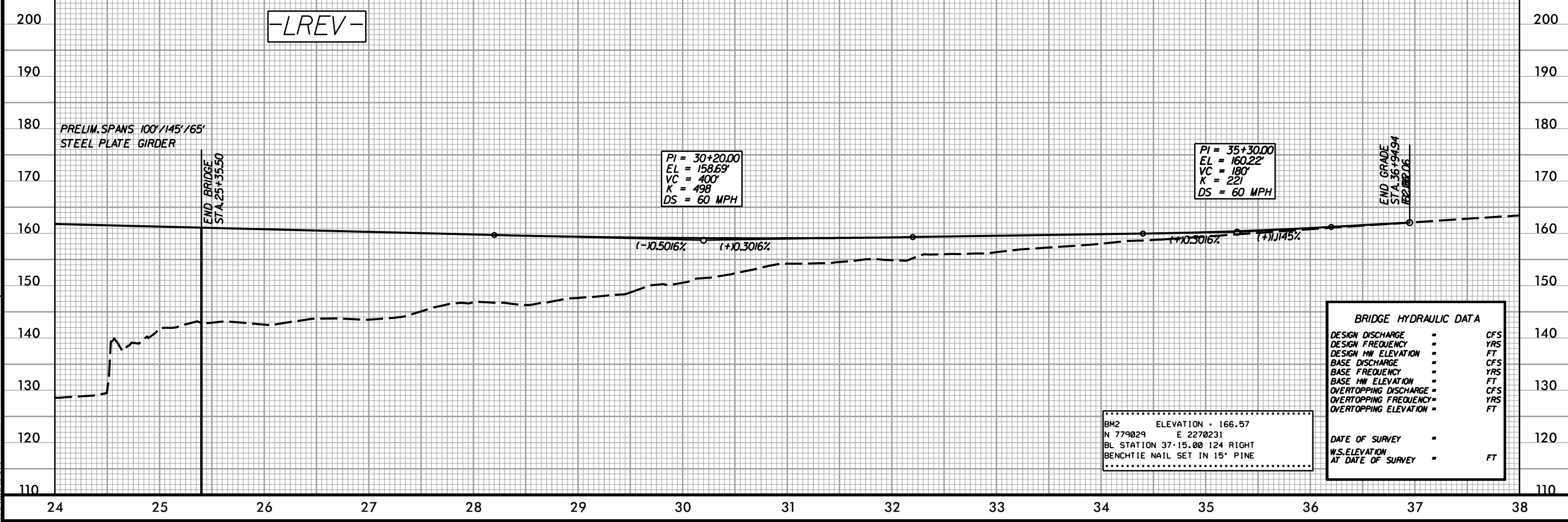
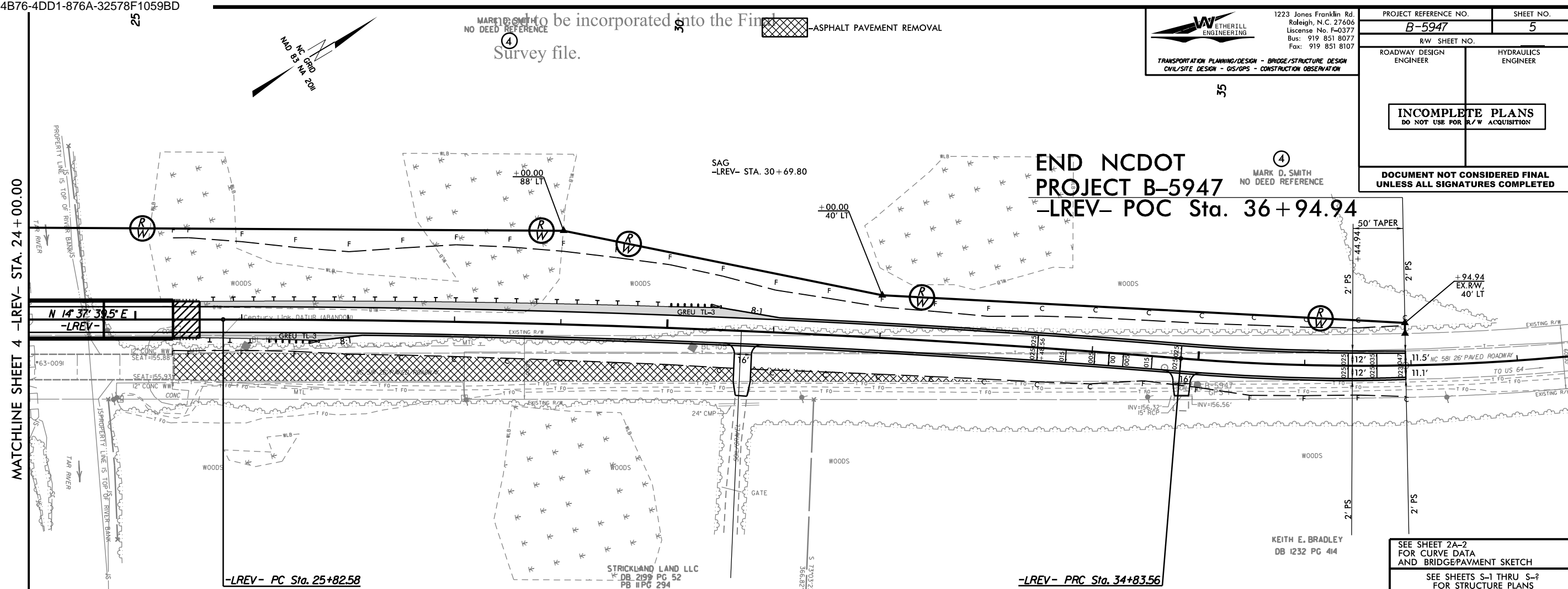
8/17/09

MARK D. SMITH
NO DEED REFERENCE
Survey file.

WETHERILL ENGINEERING
 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

PROJECT REFERENCE NO. B-5947	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



REVISIONS

8/8/2009
B-5947.rdy.psh 5.dgn

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	-	CFS
DESIGN FREQUENCY	-	YRS
DESIGN HW ELEVATION	-	FT
BASE DISCHARGE	-	CFS
BASE FREQUENCY	-	YRS
BASE HW ELEVATION	-	FT
OVERTOPPING DISCHARGE	-	CFS
OVERTOPPING FREQUENCY	-	YRS
OVERTOPPING ELEVATION	-	FT
DATE OF SURVEY	-	
W.S. ELEVATION AT DATE OF SURVEY	-	FT

BM2 ELEVATION - 166.57
 N 779029 E 2270231
 BL STATION 37+15.00 124 RIGHT
 BENCHMARK NAIL SET IN 15' PINE

12-05-0043



**HISTORIC ARCHITECTURE AND LANDSCAPES
NO SURVEY REQUIRED FORM**

This form supercedes that dated 31 May 2012

This form only pertains to Historic Architecture and Landscapes for this project. It is not valid for Archaeological Resources. You must consult separately with the Archaeology Group.

PROJECT INFORMATION

Project No:	B-5947	County:	Nash
WBS No.:	45983.1.1	Document Type:	
Fed. Aid No:		Funding:	X State Federal
Federal Permit(s):	X Yes No	Permit Type(s):	USACE
Project Description: Replace Bridge No. 91 on NC 581 over the Tar River (no off-site detour specified in review request).			

SUMMARY OF HISTORIC ARCHITECTURE AND LANDSCAPES REVIEW

DESCRIPTION OF REVIEW ACTIVITIES, RESULTS, AND CONCLUSIONS: HPOWeb reviewed on 16 October 2018 and yielded no NR, SL, LD, DE, or SS properties in the Area of Potential Effects (APE). Nash County current GIS mapping and aerial photography indicated a largely wooded APE containing several residential and institutional resources constructed mostly in the second half of the twentieth century (viewed 16 October 2018). The APE intersects the extreme western edges of two large parcels on which stand, respectively, the much altered Southern Nash Middle School (ca. 1950 and 1970s) and the early-twentieth-century Boys Club hall, each approximately 2000 feet distant (south and east) from the existing bridge and well beyond likely project impact. Constructed in 1949, Bridge No. 91 is not eligible for the National Register as it is neither aesthetically nor technologically significant according to the NCDOT Historic Bridge Inventory. Google Maps "Street View" confirmed the absence of critical architectural or landscape resources in the APE (viewed 16 October 2018).

No architectural survey is required for the project as currently defined.

WHY THE AVAILABLE INFORMATION PROVIDES A RELIABLE BASIS FOR REASONABLY PREDICTING THAT THERE ARE NO UNIDENTIFIED SIGNIFICANT HISTORIC ARCHITECTURAL OR LANDSCAPE RESOURCES IN THE PROJECT AREA:

APE equates with the study area provided in the review request (see attached). The comprehensive county architectural survey (1984), as well as later studies record no properties in the APE (Richard L. Mattson. *The History and Architecture of Nash County, North Carolina* (Nashville, NC: Nash County Planning Department, 1987)). County GIS/tax materials and other visuals support the absence of significant architectural and landscape resources in the APE. No National Register-listed properties are located in the APE.

Should the project limits or any other aspect of the design change, please notify NCDOT Historic Architecture as additional review may be necessary.

SUPPORT DOCUMENTATION

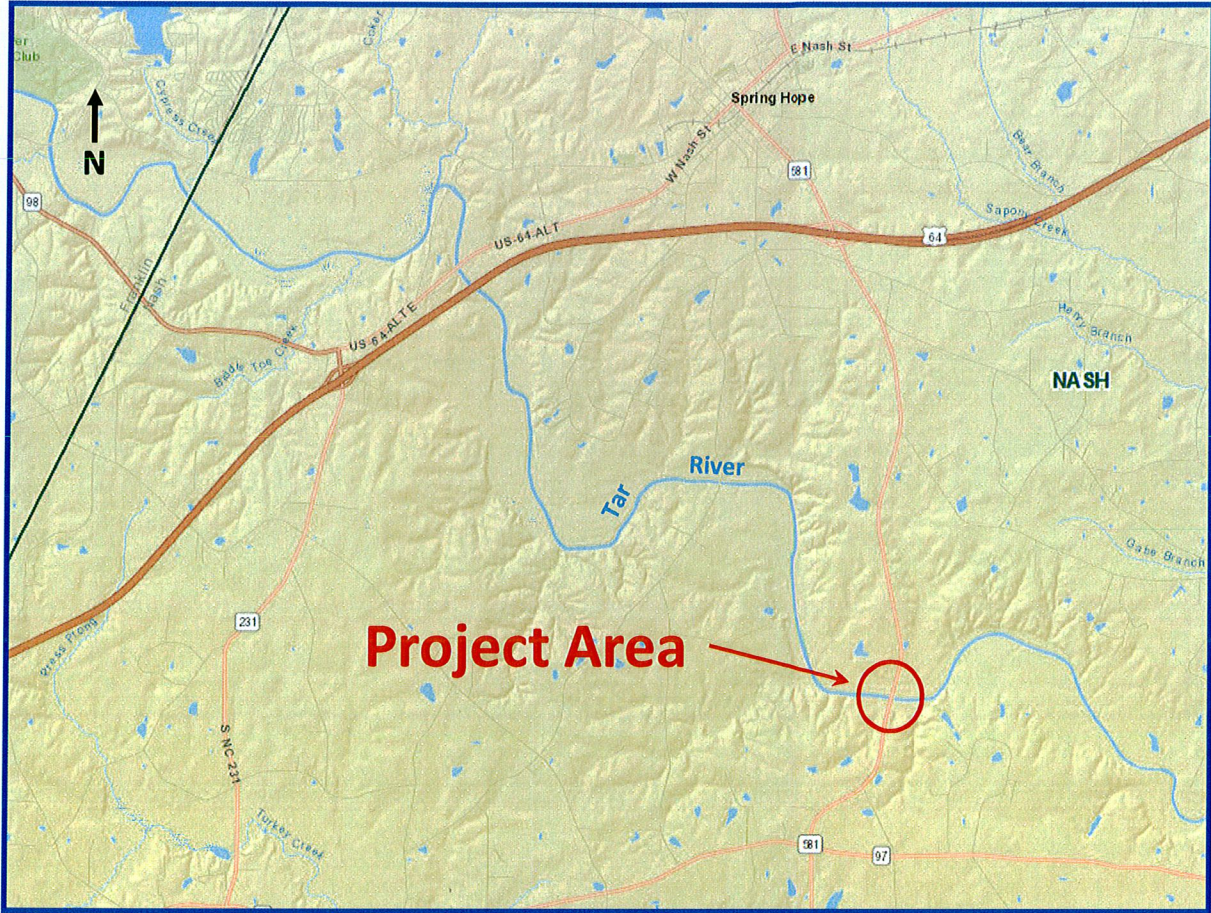
X Map(s) Previous Survey Info. Photos Correspondence Design Plans

FINDING BY NCDOT ARCHITECTURAL HISTORIAN

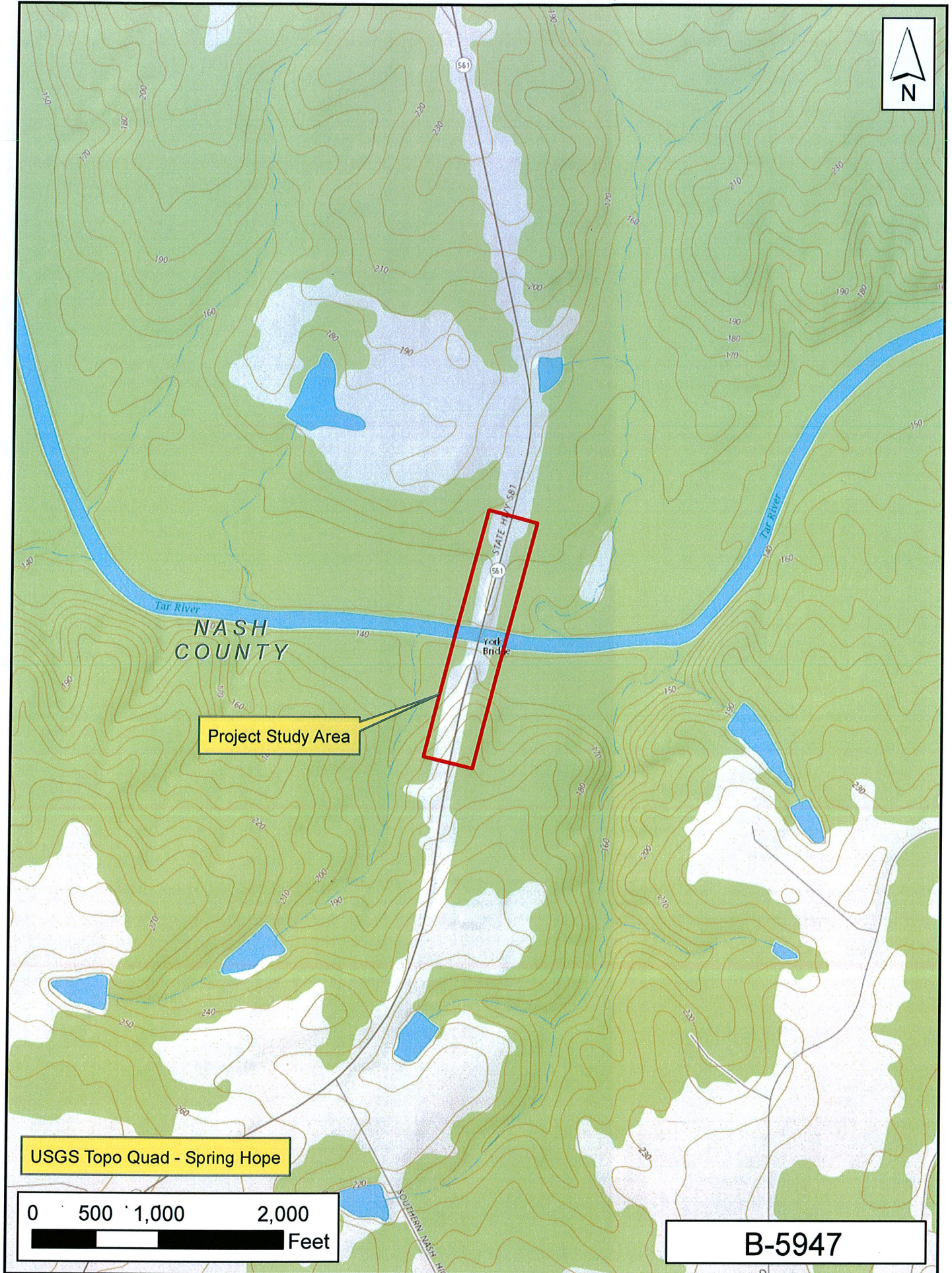
Historic Architecture and Landscapes - **NO SURVEY REQUIRED**

Vanessa C. Fabrick
NCDOT Architectural Historian

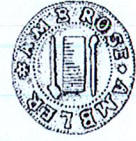
16 October 2018
Date



Bridge No. 91 Replacement B-5947 Nash County
WBS No. 45983.1.1 Base map: HPOWeb, nts



Tracking No. 12-05-0043

12-05-0043
resubmit**NO NATIONAL REGISTER OF HISTORIC PLACES
ELIGIBLE OR LISTED ARCHAEOLOGICAL SITES
PRESENT FORM**

This form only pertains to ARCHAEOLOGICAL RESOURCES for this project. It is not valid for Historic Architecture and Landscapes. You must consult separately with the Historic Architecture and Landscapes Group.

PROJECT INFORMATION

Project No: **B-5947** County: **Nash**
WBS No: **45983.1.1** Document: **MCC**
F.A. No: Funding: State Federal
Federal Permit Required? Yes No Permit Type: **USACE**

Project Description: This project proposes to replace Bridge No. 91 on NC 581 over the Tar River in Nash County, North Carolina. The archaeological Area of Potential Effects (APE) encompasses all areas of potential ground disturbing activity. (see attached shape file map). It measures approximately 2,000 ft. in length (1,000ft from each bridge end-point) and 200 ft. in width (100ft from the NC 581 center-line).

SUMMARY OF ARCHAEOLOGICAL FINDINGS

The North Carolina Department of Transportation (NCDOT) Archaeology Group reviewed the subject project and determined:

- There are no National Register listed or eligible ARCHAEOLOGICAL SITES present within the project's area of potential effects. (Attach any notes or documents as needed)
- No subsurface archaeological investigations were required for this project.
- Subsurface investigations did not reveal the presence of any archaeological resources.
- Subsurface investigations did not reveal the presence of any archaeological resources considered eligible for the National Register.
- All identified archaeological sites located within the APE have been considered and all compliance for archaeological resources with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.

Brief description of review activities, results of review, and conclusions:

To determine the cultural resource potential of the APE, numerous sources of information were considered. First, preliminary construction design, funding, and other data was examined for defining the potential impacts to the APE ground surfaces and for determining the level of effort necessary for compliance. In this case, the project is state-funded with federal (USACE) interaction and subject to Section 106 of the National Historic Preservation Act.

Next, a map review and site file search was conducted at the Office of State Archaeology (OSA) on Tuesday, November 20, 2018. This work determined that one previously recorded archaeological site (31NS12) was located proximal to the APE within the northeastern project quadrant. Recorded by UNC archaeologists Phil Perkinson and Roy Dickens in early 1969, the site occupations range temporally from the Late Paleo-Indian to Early Woodland, with Early Archaic artifactual material dominating the

12-05-0043 resubmit

assemblage. At the time of their survey, the site was characterized by agricultural row crops and pronounced erosion, particularly to the southern end of the site. While the Baily topographic map maintained at the OSA demonstrated that this prehistoric site was situated several hundred feet east of NC 581 and well beyond any potential construction impacts associated with the Bridge 91 replacement, the sketch map attached to the site form illustrated the site to form a crescent-like shape extending in a westerly direction toward the subject road. Although both maps definitively illustrate that the boundaries of 31NS12 terminate quite a distance east of the currently defined APE, the proximity of this long occupied prehistoric location suggests that additional occupations on the landforms within and directly adjacent to the APE may also contain subsurface archaeological deposits.

Examination of National Register of Historic Places (NRHP), State Study Listed (SL), Locally Designated (LD), Determined Eligible (DE), and Surveyed Site (SS) properties employing resources available on the North Carolina State Historic Preservation Office (NCSHPO) website demonstrated that no resources with potential archaeological deposits were located in the vicinity of the APE. Also, historic maps of Nash County were appraised for former structure locations, land use patterns, cemeteries, or other confirmation of historic occupation in the project vicinity. Archaeological/historical reference materials were reviewed as well.

In addition, topographic, geologic, flood boundary, lidar, and NRCS soil survey maps were referenced for the evaluation of geomorphological, pedological, hydrological, and other environmental-type elements that may have resulted in past occupation at this location. Finally, review of aerial and on-ground images (NCDOT Spatial Data Viewer, Google, ARC-GIS) afforded first-hand perspectives of the overall study area which were useful for assessing localized disturbances, both natural and human induced, which compromise the integrity of archaeological sites/deposits. Based on environmental determinants, the APE is considered to have a very low potential for the recovery of archaeological artifacts, deposits, or features. However, the site locational consistency of 31NS12 must be assessed. An archaeological survey will therefore be recommended for the project.

An in-field reconnaissance and visual survey was conducted by NCDOT archaeologists Scott Halvorsen and Paul Mohler on April 24, 2019. First, a visual inspection of the entire APE was completed. No above-ground historic features or cemeteries were encountered. Furthermore, the project quadrant that may contain traces of 31NS12 was logged with secondary vegetative growth about 10ft. high. Two transects were established, one on each side of NC 581, approximately 100ft from the roads center-line. Shovel tests were numbered sequentially south to north with the project area, were excavated at 30 meter intervals, and measured roughly 40cm x 40cm in width. Each shovel test pit location was inspected though several areas were not suitable for subsurface testing based on wetlands and slope.

Shovel test pits # 1 and 2 were situated at the southern boundary of the APE along transect #1 (west side). A typical STP contained a 7.5YR3/2 silt loam to 10cmbs atop a second stratum consisting of 7.5YR5/6 sandy clay loam to 30cmbs. Sterile subsoil was encountered at depths below 30cmbs and consisted of 5YR5/6 clay. No artifacts were collected from these two shovel tests. Shovel test #'s 3-7 were classified as no digs based on the extremely sloped land surfaces leading into a gully and creek to the west. Likewise, shovel test pits 8-10 were situated within a wetland and no shovel testing could be undertaken. In total, 10 locations were investigated for cultural resources within the southwestern project quadrant with only 2 of these constituting shovel test pit locations.

Investigation continued along the western transect into the northwestern project quadrant. Shovel test pit #'s 11 – 17 were all situated within a tagged wetland. This area contained ponded water on the surface of the APE. As a result, no subsurface testing was conducted here. STP's 18 -20 were excavated

12-05-0043 resubmit

near the northern project boundaries along transect 2 in the northwestern quadrant. A typical STP contained a first soil stratum of 7.5YR 5/2 clay loam to 40 – 50cmts atop 7.5YR5/1 clay. No artifacts were contained in any of the 3 shovel tests completed in the northwestern quadrant.

Next, shovel testing began along transect 2 (eastern side) at the southern project boundaries. Initially, the first four shovel test pits were located on a ridge trending parallel to NC 581. Four shovel test pits were excavated at 30 meter intervals and numbered 21 – 24. A typical STP contained a first soil stratum of 7.5YR5/2 sandy silt loam to 15cmts atop a second stratum of 10YR5/4 clayey loam. The third stratum was a 7.5YR5/6 strong brown sterile subsoil. No artifacts were collected from these three shovel tests excavated within the southeastern quadrant. STP's 25 – 30 were inspected but not excavated do to sloping land surfaces and ponded wetland surfaces.

Finally, shovel testing continued into the northeastern project quadrant. The first 5 shovel test pit locations (STP 31 -35) were in a wetland and therefore not excavated. The next 5 locations were excavated due to the level land surface and proximity of 31NS12. A typical STP contained a first soil stratum of 10YR5/4 clayey laom to 30cmts atop a second stratum of 7.5YR5/6 clay subsoil. No artifacts were encountered during shovel testing within the northeastern quadrant. No portions of 31NS12 extend into the currently defined APE.

Following investigation of the B-5947 project area, no further archaeological consultation will be necessary. Our work found the APE to be largely situated within a wetland area and those sections of the APE shovel tested were found to be somewhat eroded. The entire APE was visually inspected and no indication of 31NS12 was made nor any cultural remains recovered. A finding of "No historic properties present" is deemed appropriate.

SUPPORT DOCUMENTATION

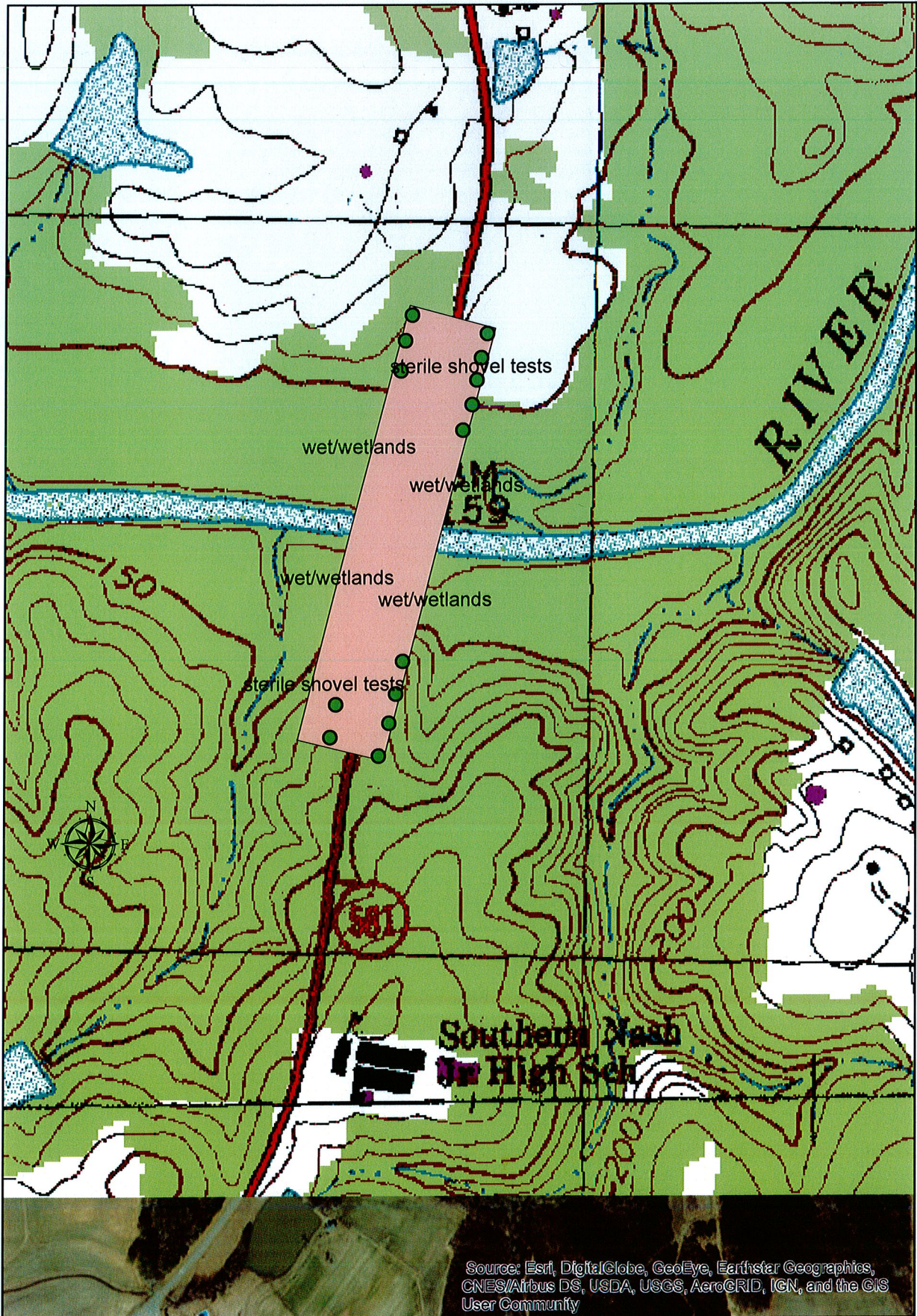
See attached: Map(s) Previous Survey Info Photos Correspondence
Signed:



4-27-19

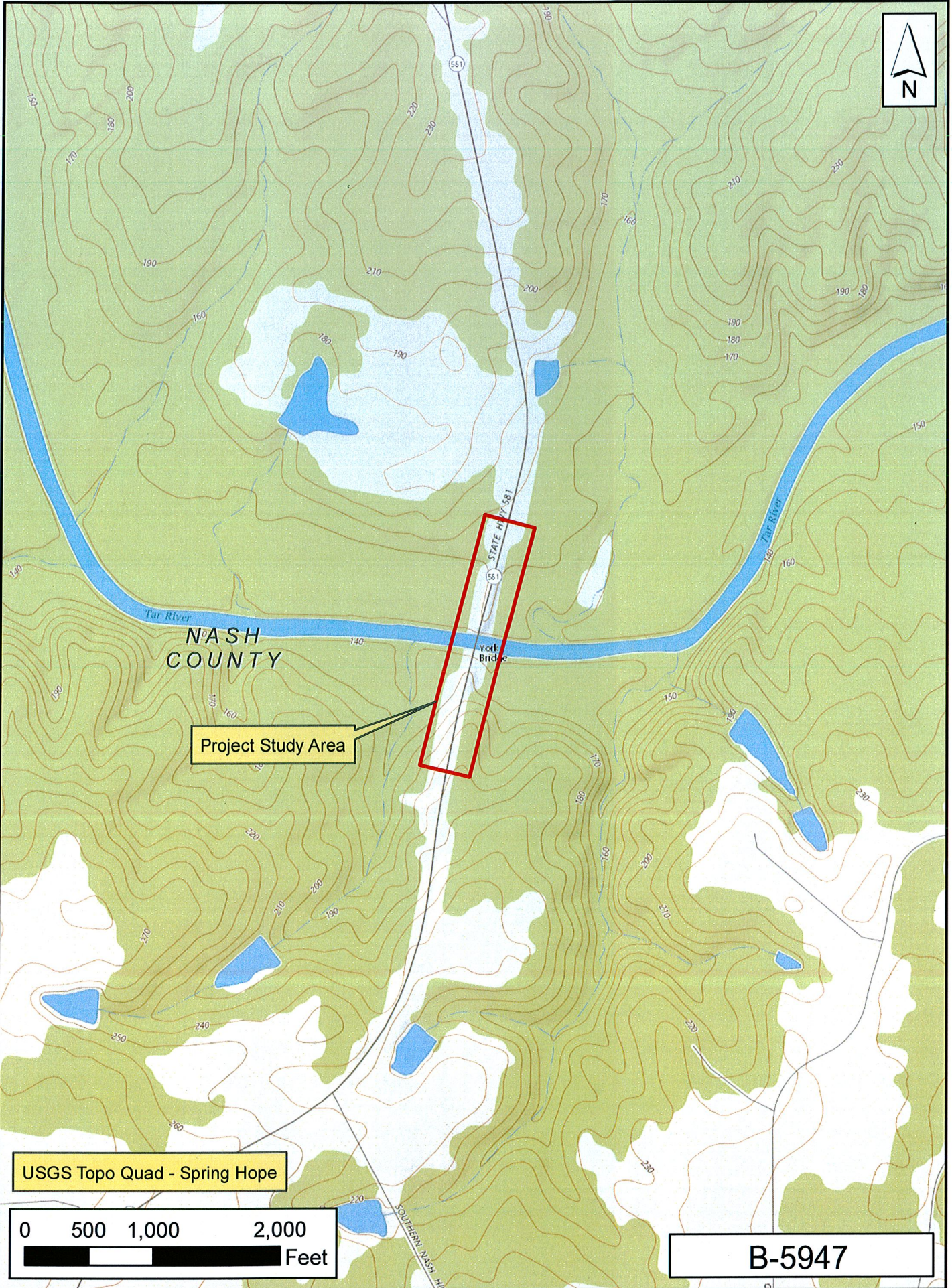
NCDOT ARCHAEOLOGIST

Date



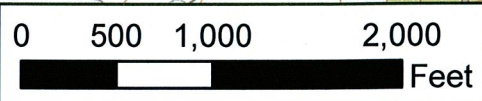
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ARC-GIS aerial shape file map illustrating the location and boundaries of the archaeological Area of Potential Effects (APE), sterile shovel test pit locations (green dots), & wetlands in Nash County, North Carolina.



Project Study Area

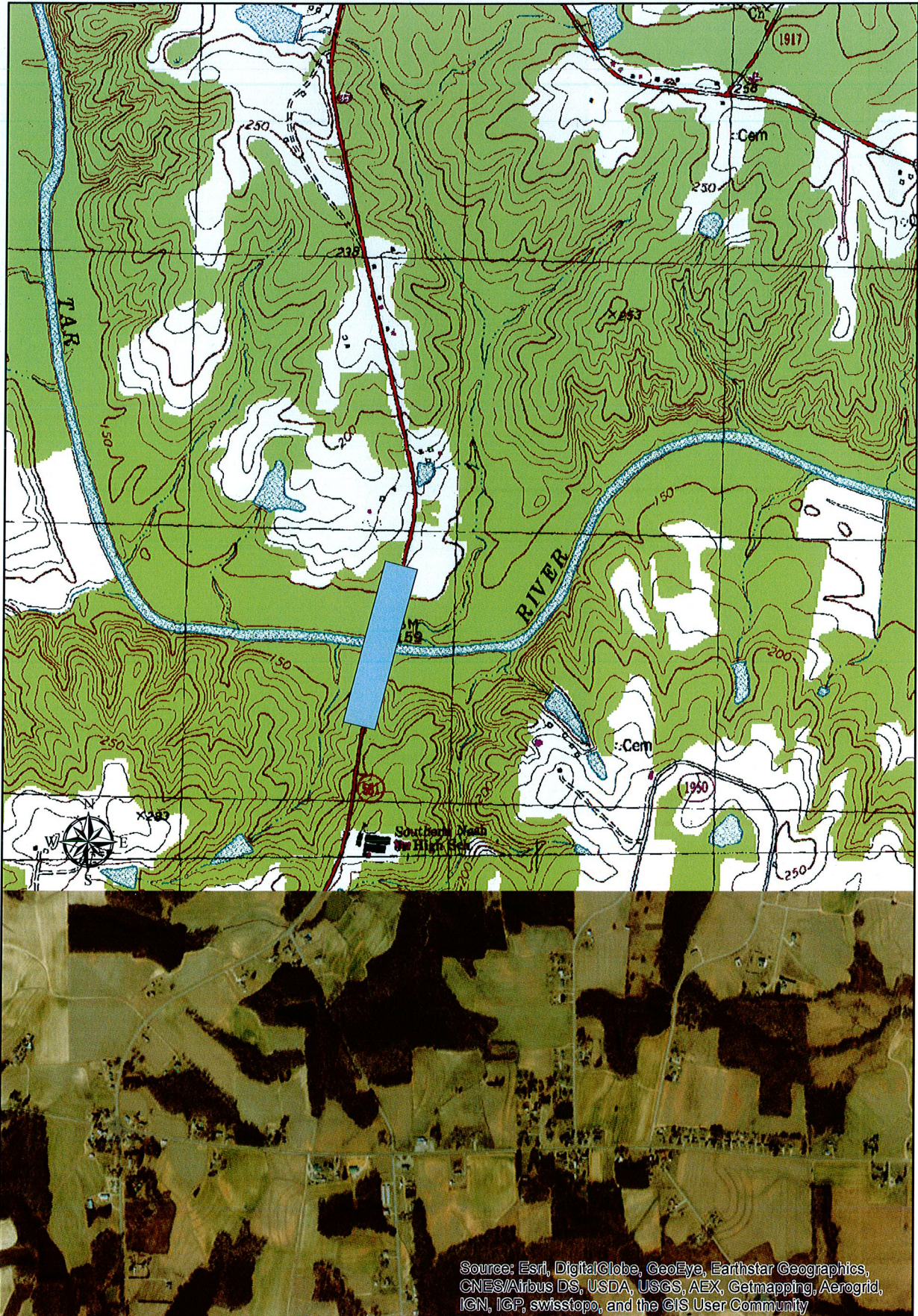
USGS Topo Quad - Spring Hope



B-5947



ARC-GIS aerial shape file map detailing the location and boundaries of the archaeological Area of Potential Effects (APE) in Nash County, North Carolina.



Portion of the Spring Hope topographic map detailing the location and boundaries of the archaeological Area of Potential Effects (APE) in Nash County, North Carolina.